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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/753,274

01/07/2004

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07/09/2008

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EXAMINER

KING, JAMAL J

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/753,274 | Applicant(s) SHANKAR ET AL. | |
| | Examiner JAMAL KING | Art Unit 2614 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/3/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

1. This action is in response to the amendment and argument filed on 3/18/2008. Claim 4 is cancelled. Claims 1-3 and 5-52 have been amended. Claims 1-3 and 5-52 have been rejected.

Drawings

2. The corrections that were applied to the drawings, amending paragraph [0032], are accepted by the examiner.

Specification

3. The corrections that were applied to the specification, amending paragraph [0032], are accepted by the examiner.

Claim Rejections - 35 USC § 112

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 depends on canceled claim 4.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 6-8, 18, 24, 27, 29-31, 41, 47, 49 and 51-52 and are rejected under 35 U.S.C. 102(b) as being anticipated by Bernstein (U.S. Patent 7,197,010)

As per claim 1:

Bernstein discloses a method for determining the source of audio degradation in an IP telephony environment, the method comprising the computer-implemented steps of: (column 5, lines 62-64)

- for each switching device of a set of switching devices that are configured on a network between a first endpoint and a second endpoint (column 5, lines 49-50); where, "...a connection between several company branches via an IP network" is "switching device of a set of switching devices that are configured on a network between a first endpoint and a second endpoint" as claimed.

- storing a reference version of an audio signal waveform at an originating device (column 7, lines 25-29); where "received and process the received reference signal and stored reference signal...in a two-way mode" is "storing a reference version of an audio signal waveform at an originating device" as claimed.

- transmitting, from an originating device to the switching device, a reference version of an audio waveform (column 3, lines 54-59); where "observation points" is "originating device and switching device" as claimed.

- receiving a second version of the audio waveform that represents the waveform after transmission at least to the switching device (column 3, lines 60-64); where "other observation point" is "switching device" as claimed.

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- computing audio degradation that occurred between the origination device and the switching device by comparing the reference version of the audio waveform with the second version of the audio waveform (column 7, lines 5-8)
- determining the source of audio degradation in a path between the first endpoint and second endpoint based on the audio degradations associated with each of the switching devices of the set of switching devices (column 7, lines 15-18)
- storing an identifier of the source of audio signal degradation (column 7, lines 25-29)

As per amended claim 6:

- Bernstein discloses the step of receiving includes receiving the second version of the audio signal waveform at the originating device from the switching device (column 3, lines 54-59); where “observation points” is “originating device and switching device”.
- the step of computing the audio signal degradation consists of computing the audio signal degradation that occurred in a round-trip path between the originating device and the switching device (column 7, lines 25-29)

As per amended claim 7:

- Bernstein discloses the step of receiving includes receiving the second version of the audio signal waveform at the switching device (column 3, lines 54-59)
- the step of computing includes computing the audio signal degradation at the switching device (column 7, lines 25-29)

As per amended claim 8:

-Berstein discloses for each switching device of a set of switching devices, receiving from the switching device a measure of the audio signal degradation that was computed at the switching device (column 7, lines 25-29)

As per claim 18:

-Berstein discloses a method for determining audio degradation in a path of an IP telephony environment, the method comprising the computer-implemented steps of: (column 5, lines 62-64)

-receiving from an originating device, at a network switching device, a reference version of the audio waveform (column 3, lines 60-64)

-transmitting, to the originating device a second version of the reference version of the audio signal waveform that represents the audio signal waveform after transmission at least to the network switching device (column 3, lines 54-59) for computing audio signal degradation that occurred in a path between the originating device and the network switching device by comparing the reference version of the audio signal waveform with the second version of the reference version of the audio signal waveform (column 7, lines 5-8)

Claims 24, 47 and 51 recite similar limitations as claim 1 and are rejected under the same reason set forth in the connection of the rejection of claim 1.

Claims 27 and 29 recite similar limitations as claim 6 and are rejected for the same reason set forth in the connection of the rejection of claim 6.

Claim 30 recites similar limitations as claim 7 and is rejected for the same reason set forth in the connection of the rejection of claim 7.

Claim 31 recites similar limitations as claim 8 and is rejected for the same reason set forth in the connection of the rejection of claim 8.

Claims 41, 49 and 52 recite similar limitations as claim 18 and are rejected under the same reason set forth in the connection of the rejection of claim 18.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 9-14, 17, 20, 25-26, 32-37, 40, 43, 45-46, 48 and 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein (U.S. Patent 7,197,010) and further in view of Keane (U.S. Publication No. 2002/0193999 A1).

As per amended claim 2:

-Bernstein does not disclose the step of computing audio signal degradation includes computing audio signal degradation with a perceptual measure. However, Keane in an analogous art discloses the step of computing audio signal degradation includes computing audio signal degradation with perceptual measure (Keane, page 3, paragraph [0031], lines 47-48, "Preferably the speech quality assessment algorithm is a PESQ algorithm").

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of

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Berstein in disclosing the step of computing audio signal degradation includes computing audio signal degradation with perceptual measure. The modification would have been obvious because one of the ordinary skill in the art would want to compute the amount of error or degradation that may exist.

As per amended claim 3:

-Berstein does not disclose the step of computing audio signal degradation includes computing audio signal degradation using Perceptual Evaluation of Speech Quality (PESQ) techniques. However, Keane in an analogous art discloses the step or computing audio signal degradation includes computing audio signal degradation using Perceptual Evaluation of Speech Quality (PESQ) techniques (Keane, page 3, paragraph [0031], lines 47-48, "Preferably the speech quality assessment algorithm is a PESQ algorithm") and (Keane, page 5, paragraph [0075] lines 51-53, "The speech quality assessment algorithm produces a measure of the speech quality of the particular voice call").

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Bernstein in disclosing the step of computing audio signal degradation includes computing audio signal degradation using Perceptual Evaluation of Speech Quality (PESQ) techniques. The modification would have been obvious because one of the ordinary skill in the art would want to compute the amount of error or degradation that may exist.

As per claim 9:

-Berstein does not disclose determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint. However, Keane in an analogous art discloses determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint (Keane, page 4 [0068] lines 9-12, "FIG. 1 is a schematic diagram of a packet-based communications network comprising communications network nodes (A, B, C) modified for use in the present invention."); where "communications network nodes" are the "switching devices" as claimed.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Berstein in disclosing determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint. The modification would have been obvious because one of the ordinary skill in the art would want devices from different network to interact.

As per claim 10:

-Berstein does not disclose determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint by determining a set of network switching devices that are in a path from the first endpoint to the second endpoint. However, Keane in an analogous art discloses determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint by determining a set of network switching devices that are in a path from the first endpoint to the second endpoint (Keane, page 4 [0070] lines 32-35, "This call passes from node A to node B and the actual packets of the call

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may travel via different routes between those two nodes.”); where “different routes between those two nodes” is “set of network switching devices that are in a path...” as claimed.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Bernstein to disclose determining of the set of network switching devices that are configured on the network between the first endpoint and the second endpoint by determining a set of network switching devices that are in a path from the first endpoint to the second endpoint. The modification would have been obvious because one of the ordinary skill in the art would want the information to be delivered from one endpoint to another endpoint.

As per claim 11:

-Bernstein discloses determining the set of network switching devices that are configured on the network between the first endpoint and the second endpoint by determining a set of network switching devices that are configured in a path from the second endpoint to the first endpoint (column 3, lines 62-66); where “receiving the marker and voice test signal transmitted through the network and returning such signals through the network...where such signals originated” is “determining the set of network switching devices...configured in a path from the second endpoint to the first endpoint” as claimed.

As per claim 12:

-Berstein does not disclose the path from the first endpoint to the second endpoint is different than the path from the second endpoint to the first endpoint. However, Keane in an analogous art discloses the path from the first endpoint to the second endpoint is different than the path from the second endpoint to first endpoint. (Keane, page 5, paragraph [0074], lines 20-24, "Individual packets for the voice call between A and B may take different routes between A and B...").

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Berstein to disclose the path from the first endpoint to the second endpoint is different than the path from the second endpoint to the first endpoint. The modification would have been obvious because one of the ordinary skill in the art would want the information that is returned from the second endpoint to be received from a different and faster path.

As per claim 13:

-Berstein does not disclose the set of switching devices comprises every switching device configured on a path between the first endpoint and the second endpoint. However, Keane in an analogous art discloses the set of switching devices comprises every switching device configured on a path between the first endpoint and the second endpoint (Keane, page 5 [0073], lines 8-13, "These packets follow any of the possible routes between A and B and in doing so may pass through nodes...(for example, nodes D, E, F and G in FIG. 1)."

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Bernstein to disclose the set of switching devices comprises every switching device configured on a path between the first endpoint and the second endpoint. The modification would have been obvious because one of the ordinary skill in the art would want the switching devices to be synchronized so the endpoints can received accurate signals despite the taken route.

As per claim 14:

-Bernstein does not disclose the set of switching devices comprises a subset of the switching devices configured on a path between the first endpoint and the second endpoint. However, Keane in an analogous art discloses the set of switching devices comprises a subset of the switching devices configured on a path between the first endpoint and the second endpoint (Keane, page 5 [0073], lines 8-13, "These packets follow any of the possible routes between A and B and in doing so may pass through nodes...(for example, nodes D, E, F and G in FIG. 1)."); where "nodes D, E, F and G" are "a subset of switching devices" as claimed.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Bernstein to disclose the set of switching devices comprises a subset of the switching devices configured on a path between the first endpoint and the second endpoint. The modification would have been obvious because one of the ordinary skill in the art would

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want enough switching devices to be synchronized so the endpoints can received accurate signals despite the taken route.

As per claim 17:

-Berstein does not disclose the steps are performed by one or more network routers. However, Keane in an analogous art discloses (Keane, page 3, paragraph, [0026], lines 1-4, "...other types of packet-based communication network may be used such as wireless local area network (LAN), global system for mobile communications (GSM) or third generation (3G) network."); where "wireless local area network (LAN), global system for mobile communications (GSM) or third generation (3G) networks" are "network routers" as claimed.

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Keane into the method of Berstein to disclose the steps are performed by one or more network routers. The modification would have been obvious because one of the ordinary skill in the art would want a variety of device in transmitting the signal from endpoint to endpoint.

Claims 20, 40 and 43 recite similar limitations as claim 17 and are rejected for the same reason set forth in the connection of the rejection of claim 17.

Claim 25 recites similar limitations as claim 2 and is rejected for the same reason set forth in the connection of the rejection of claim 2.

Claim 26 recites similar limitations as claim 3 and is rejected for the same reason set forth in the connection of the rejection of claim 3.

Claim 32 recites similar limitations as claim 9 and is rejected for the same reason set forth in the connection of the rejection of claim 9.

Claim 33 recites similar limitations as claim 10 and is rejected for the same reason set forth in the connection of the rejection of claim 10.

Claim 34 recites similar limitations as claim 11 and is rejected for the same reason set forth in the connection of the rejection of claim 11.

Claim 35 recites similar limitations as claim 12 and is rejected for the same reason set forth in the connection of the rejection of claim 12.

Claim 36 recites similar limitations as claim 13 and is rejected for the same reason set forth in the connection of the rejection of claim 13.

Claim 37 recites similar limitations as claim 14 and is rejected for the same reason set forth in the connection of the rejection of claim 14.

8. Claims 5, 21, 28, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein (U.S. Patent No. 7,197,010) and in further in view of Baker (U.S. Publication No. 20040153716).

The examiner assumes that claim 5 is dependent upon claim 1 because claim 4 is cancelled.

As per amended claim 5:

-Bernstein does not disclose the step of receiving includes receiving the second version of the audio signal waveform over a reliable Transmission Control Protocol (TCP) connection after the switching device timestamps packets that it received that correspond with the reference version of the audio signal waveform that was transmitted

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by the originating device and buffers the packets before sending them to the originating device over the reliable TCP connection. However, Baker in an analogous art discloses the step of receiving includes receiving the second version of the audio signal waveform over a reliable Transmission Control Protocol (TCP) connection after the switching device timestamps packets that it received that correspond with the reference version of the audio signal waveform that was transmitted by the originating device and buffers the packets before sending them to the originating device over the reliable TCP connection (Baker, page 1, paragraph [0009], lines 61-63, "Isochronous data packets, which are transmitted from a transmitting device...are labeled with a timestamp.") and (Baker, page 2, paragraph [0009], lines 2-5, "When the receiving device receives such a packet, it holds the packet in a buffer until the value of the timestamp of the packet is equal to the value of the CTR in the receiving device.")

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Baker into the method of Berstein to disclose the step of receiving includes receiving the second version of the audio signal waveform over a reliable Transmission Control Protocol (TCP) connection after the switching device timestamps packets that it received that correspond with the reference version of the audio signal waveform that was transmitted by the originating device and buffers the packets before sending them to the originating device over the reliable TCP connection. The modification would have been obvious because one of the ordinary skill in the art would want the packet to be transmitted properly.

-Berstein discloses the step of computing the audio signal degradation consists of computing the audio signal degradation that occurred in a path from the originating device to the switching device (column 7, lines 5-8)

Claims 21, 28 and 44 recite similar limitations as claim 5 and are rejected for the same reason set forth in the connection of the rejection of claim 5.

9. Claims 15 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berstein (U.S. Patent No. 7,197,010) and in further in view of Reynolds, (US Pub No. 2002/0136508).

As per claim 15:

-Berstein does not disclose the step of transmitting is performed for each switching device of the set of switching devices in a sequential order from a switching device that is nearest to the first endpoint to a switching device that is nearest to the second endpoint. However, Reynolds in an analogous art discloses the step of transmitting is performed for each switching device of the set of switching devices in a sequential order from a switching device that is nearest to the first endpoint to a switching device that is nearest to the second endpoint (Reynolds, page 7, paragraph [0076], lines 16-19, "Even the transmission of these packets is subject to the limitations described in FIG. 1, where the PSTN system transmits the packets in sequence") and (Reynold, Figure 5).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Reynolds into the method of Berstein to disclose the step of transmitting is performed for each switching device of

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the set of switching devices in a sequential order from a switching device that is nearest to the first endpoint to a switching device that is nearest to the second endpoint. The modification would have been obvious because one of the ordinary skill in the art would want to receive the packets in order to avoid possible signal error.

10. Claims 16, 19, 39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berstein (U.S. Patent No. 7,197,010) and in further in view of Bennett (U.S. Publication No. 2004/0090921).

As per claim 16:

-Berstein does not disclose the steps are performed by one or more intermediate network switching devices. However, Bennett in an analogous art discloses the step performed by one or more intermediate network switching devices (Bennett, page 1, paragraph [0014], lines 49-52, "Redirection capability, which provides the capability to send a packet from a central location to a second host, and have the second host re-direct or transmit a measurement packet to a third host, receive the reply packet and forward the result to the first host.")

Therefore it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the feature of Bennett into the feature of Berstein to disclose the steps that are performed by one or more intermediate network switching devices. The modification would have been obvious because one of the ordinary skill in the art would want transmit packets from devices besides the end users.

Claims 19, 39 and 42 recite similar limitations as claim 16 and are rejected for the same reason set forth in the connection of the rejection of claim 16.

11. Claims 23, 46, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berstein (U.S. Patent No. 7,197,010), Baker (U.S. Publication No. 20040153716) and in further in view of Keane (U.S. Publication No. 2002/0193999 A1).

Claims 23, 46, 48 and 50 recite similar limitations as claim 17 and are rejected for the same reason set forth in the connection of the rejection of claim 17.

12. Claims 22 and 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berstein (U.S. Patent No. 7,197,010), Baker (U.S. Publication No. 20040153716) and in further in view of Bennett (U.S. Publication No. 2004/0090921).

Claims 22 and 45 recite similar limitations as claim 16 and are rejected for the same reason set forth in the connection of the rejection of claim 16.

Response to Arguments

13. Applicant's arguments file 3/18/2008 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMAL KING whose telephone number is (571)270-3160. The examiner can normally be reached on 6:00 a.m.-4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (571)-272-7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jamal King

Patent Examiner

Art Unit: 2614

/Ahmad F. MATAR/

Supervisory Patent Examiner, Art Unit 2614